1 A scoping review identifying interventions that have been tested to
2 optimise the experience of people from ethnic minority groups
3 receiving systemic anti-cancer therapy (SACT)

4

5 **Abstract**

6 Disparities have been identified in many aspects of the cancer care pathway for people from minority
7 ethnic groups (MEG). Adherence to systemic anti-cancer therapies (SACT) has been shown to impact
8 morbidity and mortality and therefore unequitable experiences can have a detrimental effect on
9 outcomes. The purpose of this scoping review was to identify interventions that focused on
10 improving the experiences and clinical outcomes in people from MEG receiving SACT treatments.

11 A comprehensive search was performed using three electronic databases (Medline, Embase and
12 Cinahl). Standard scoping review methodology following PRISMA guidelines was used. Studies were
13 included that assessed interventions to improve MEG patients experience with SACT. Independent
14 duplicate screening, study selection, data extraction and quality assessment was undertaken. Results
15 of the studies were assessed using a published equity framework.

16 Nine studies were included after exclusion criteria were applied. Studies described six digital, two in
17 person and one hybrid interventions employing different research methodologies, ranging from
18 randomised controlled trials (RCT's), feasibility study and mixed methods studies. The majority of
19 interventions in this study were delivered remotely, using digital platforms such as websites,
20 recorded educational training materials as well as social media. These interventions were conducted
21 in the USA and primarily targeted early breast cancer patients from African American backgrounds.

22 This scoping review showed that there has been a very small number of studies investigating
23 interventions to optimise SACT treatment experiences in people from MEG. We found evidence of
24 interventions incorporating the equity domains that reported improved patient engagement and
25 experience. This new knowledge will help to implement future SACT interventions, addressing health
26 inequities across the cancer continuum.

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Introduction

Cancer is the leading cause of mortality worldwide and over the past two decades, innovations in drug treatment have improved overall survival [1]. Improvements are not equally applicable to all patients, with significant differences in cancer mortality rates between people from minority ethnic groups [MEG] [2]. Although considerable progress has been made in the last decade describing cancer health disparities amongst people from MEG, inequalities still exist, which was further highlighted during COVID-19 pandemic. [3]

The specific health barriers that people from MEG are still facing today are multifactorial and are influenced by patients' demographics (age, gender, insurance, social class, race, and geography), language and acculturation, attitudes, and family and cultural contexts. [4] Persistent lack of resources to protect and improve health, influences how people from MEG perceive healthcare services and are underpinned by intermediary, social and structural determinants of health. [5] At present in the United Kingdom (UK) there is limited research evidence to indicate what types of intervention would prove most effective among MEG and marked differences among the UK population exist mainly due to lack of preventative care in general. [6]

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With the World Health Organisation's declaration, post COVID-19 public health emergency, attention has shifted to the prevention and treatment of other communicable diseases as well as non-communicable diseases, and the critical contributions of medicines globally. Cancer incidence is expected to rise significantly through 2050, particularly in lower-income countries, with an increase of over 12 million new cases annually. The growing disease burden underscores the urgent need for new treatments to enhance survival and quality of life. [7]

Drug treatments for cancer are available in many forms; oral, intravenous, sub-cutaneous and intra-thecal [1]. There has been a rise in the use of oral therapies in the last 10 years requiring administration and correct dosing to be managed by the person with cancer, over long periods of time. Oral therapies are convenient for the patient as they reduce frequent visits to cancer centres to receive intravenous drugs and enables patients to self-manage their treatment. However, patient adherence to oral anticancer drugs is an emerging issue in modern oncology. A systematic review by Greer et.al. reported that patients' adherence to oral SACT can be as low as 46%. [8] A further study investigated rates of non-adherence between people from a White British background and ethnic minority breast cancer survivors finding that women from minority ethnic groups had a significantly higher risk of non-adherence than women who were from a White British background (odds ratio = 1.50, p = 0.03). [9] Patients are taking medications for prolonged periods of time for certain cancers and are expected to notice and report serious side effects to their medical team. Without tailored patient education, it is difficult to achieve maximum benefit for the individual patient and consequently for the whole health system.

Statistics in the UK show that more than a third (36%) of all cancer cases are diagnosed in people aged 75 and over, and with age the number of comorbidities requiring medication also rises [10,11]. Patients on multiple medications may struggle to adhere to Systemic Anti-Cancer Therapy (SACT) treatment regimen and there are many factors influencing non-adherence to oral anti-cancer drugs,

such as socioeconomic-related factors, healthcare system-related factors, patient-related factors, disease-related factors, and therapy-related factors [12]. Non-adherence to medications negatively affects efficacy, safety and costs of therapies. Evidence suggests that there is a social gradient to non-adherence, as belonging to an ethnic minority might have a negative impact on adherence to medications, which is closely related to the level of health literary. [13]

Health literacy is defined as "the degree to which individuals can obtain, process and understand the basic health information to make appropriate health decisions". [14] It is known that high health literacy is associated with increased patient engagement, better self-management and essentially improved health outcomes [12]. There is evidence to suggest that healthcare professionals should be addressing unconscious biases when identifying patients with low literacy levels rather than targeting knowledge deficit .[15] Implicit biases are unconscious attitudes and beliefs, that influence people's behaviour and interracial interactions often may produce mistrust in healthcare.[16] While there are increasing efforts to explore how treatments can be improved for people from MEG in Western societies, a holistic global review of this pressing matter does not yet exist. This may, in part, be due to the tendency among researchers to focus on specific countries, diseases and impacted communities [17]. The intersectionality of ethnicity with other factors such as advanced age, health and digital literacy compound the inequity.

The present review draws together available evidence on the types of interventions used to optimise cancer patients from MEG treatment with systemic anticancer therapy (SACT). The findings from this review will inform the design of potential interventions, to improve adherence and subsequent outcomes to achieve equitable cancer care.

The review was guided by three research questions that supported the aim of identifying interventions that have been used to optimise SACT treatment in patients of different ethnicities.

1. How were interventions conducted in their chosen patient population?
2. Have these interventions improved patient experience, safety and efficacy of treatments?
3. What were the key equity dimensions related to these interventions?

Methods

Protocol and registration

This scoping review followed the Arskey and O'Malley methodological framework for scoping reviews [18] and the Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) checklist criteria [19] [See Appendix 1]. The study protocol was registered on Open Science Framework (registration DOI 10.17605/OSF.IO/KFS7H).

Search strategy

The population, intervention, comparison, outcome (PICO) framework [20] was used to develop the search strategy. Following this, a comprehensive search was performed from database inception until June 7th, 2023 with the following databases: EMBASE (Ovid), MEDLINE (Ovid) and Cumulative Index to Nursing and Allied Health Literature (CINAHL). The search strategies used MESH terms and key words outlined in Appendix 2. The reference lists of the 7 selected publications were searched for additional sources and additional 2 publications were identified. A combined initial screening of title and abstract for eligibility was then conducted using a priori study protocol. Following the initial screening at the title and abstract level, a second researcher (author LS) verified 10% of exclusions against the inclusion criteria. Subsequently, the remaining publications that met the inclusion criteria

1 underwent full-text screening for eligibility. To ensure improved accuracy, 100% of included and 5%

2 of excluded documents were checked by author LS, and discrepancies were resolved via consensus.

3 The search was re-run on the 6th of August 2024 with the following databases: EMBASE (Ovid) and

4 MEDLINE (Ovid); no new studies were identified.

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6 Eligibility criteria

7 Eligibility criteria are summarised in Table 1. The population of this study was defined as people from

8 MEG, classified based on a combination of social, cultural or linguistic characteristics that would

9 distinguish them from the majority of the population in the United Kingdom (UK). All cancer types

10 were included in the study and the types of interventions that were considered ranged from

11 educational programs, behavioural interventions, changes in healthcare delivery models to

12 pharmacological adjustments. The delivery of interventions could be provided by any type of

13 healthcare provider and the setting for interventions was not limited to clinical, online or

14 community-based services. The outcome of patient experiences was defined by numbers of health

15 interactions or surveys capturing satisfaction within interventions, that influenced patient

16 perceptions to various outcomes as defined in Table 1.

17 [Table 1] PICO search strategy

Eligibility criteria	Population	Intervention	Comparison	Outcome
Inclusion criteria	Adult (over 18 y) People from MEG Receiving SACT	Studies including interventions to better manage systemic anti-cancer therapies (SACT) Studies exploring implementation of interventions Study types included in the review were ==evaluation studies,== randomised/non-randomised controlled trials and all observational studies.	Usual care/No intervention	Adherence and compliance to therapy (SACT) defined by either patient following prescribed treatment regimen or treatment completion. Quality of life (measured using QOL assessment tools) Adverse events to treatments Symptom management Self-efficacy Barriers and limitations to implementation of interventions ==Patient experiences of intervention delivery== Healthcare utilization, survival rates, cost-effectiveness, disparities in care
Exclusion criteria	Patients under 18 years old	Studies including opinion pieces, literature and systematic reviews, non-English studies, conference abstracts Studies not describing an intervention Not retrievable studies	N/A	N/A

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Key characteristics of the interventions described the following parameters in these studies: author, year, country, intervention type, objectives, methods, sample demographics, outcomes, dimensions of accessibility to interventions, quality assessment of interventions.

Selection of sources of evidence

The RefWorks bibliographic software package was used to manage all the references. Potential biases were considered during the selection process. The inclusion of a specific population in the study can have a dramatic impact on the conclusions for the effectiveness of a treatment. [21] It is known that racial disparities among cancer patients are a widespread phenomenon affecting health outcomes of this group of patients, so by selecting this population could introduce a spectrum bias and publication bias. To avoid these biases two researchers conducted the selection process, including studies with positive and negative research findings. The reviewers verified that the studies met the eligibility criteria and addressed our research question.

Data charting process

Studies that met inclusion criteria were summarised qualitatively, and the summary of the results reported according to the Arskey and O'Malley guidelines [18].

Two Excel data extraction forms were used to organise the review process:

1. Data were extracted from articles and charted using the unique chart adapted from the Template of intervention description and Republication checklist [Appendix 3] [22].
2. The methodological quality of the empirical studies was critically appraised by two researchers using the Mixed Methods Appraisal Tool (MMAT) [Appendix 4] [23].

Participant and design characteristics of the studies are summarised in table 2. Following extraction of the data, studies were summarised in table 3. and included the following details: author, year, country, intervention, methods, sample size, study population, cancer type and specific study outcomes.

Data synthesis and reporting

Data were synthesized using the equity framework adapted from Sayani et al. [5]. To assess accessibility dimensions of the interventions there were five parameters used in the process: approachability, acceptability, availability, affordability, and appropriateness of the studies. Interventions were mapped against the result section of the framework using five dimensions and the summary is provided in figure 2. The features listed under each dimension in Figure 1 were based on Sayani et.al work, as well as clinical practice and early conversations with the patients and partners in this study.

Only the data relevant to SACT was extracted from the original equity framework, which was designed to assess effectiveness of interventions in accessing lung cancer screening amongst targeted priority populations. Table 4 contains 5 parameters that were used to analyse the intervention descriptions and the definition of each is provided as follows:

1) Approachability parameter included information exploring the ability of participants to perceive risk about the available support services, recruitment process and personalised risk assessment.

2) Acceptability parameter assessed the ability to seek information through social and cultural factors determining participation in interventions, such as the use of translator services, sociocultural training for staff as well as translating materials into native languages.

3) Availability assessed the ability to reach wider communities for participation in the intervention, including ability to use technology and transportation considerations.

4) Affordability assessed any costs associated with SACT treatment and whether indirect costs were considered when designing an intervention.

5)Appropriateness parameter was used to assess patient's engagement and empowerment to make informed decisions during interventions.

Results

<u>Search results</u>

The initial search of the databases yielded 1356 articles of which 106 were taken to abstract review following removal of duplicates (n=41) (Figure 2). 1209 articles were removed after title screen, which was performed by researcher (JM) with a 10% validation performed by researcher (LS). Full abstract review was performed by two researchers (JM, LS). 41 articles were excluded after the abstract screening stage leaving 65 articles for full review. Following the application of inclusion and exclusion criteria by both authors, seven studies were included in analysis and quality assessment. An additional, two studies were identified through citation searches, resulting in a total of nine studies included in this scoping review. Mixed Methods Appraisal Tool (MMAT) was used to assess the overall quality of the studies and the overall score provided in table 3. The detailed analysis of the quality of studies are summarised in Appendix 4 [23]. To explore types of interventions the template of intervention description and Republication checklist was adapted and used to analyse data [Appendix 3] [22].

Table 2. Participant and design characteristics of studies in the scoping review (n = 9).

Study characteristics	Number (n)
Cancer type:	
Breast	n=7
Multiple	n=1
Breast and Lung	n=1
Sample size (range)	n=24-1442
Participant age (range)	n=45-63
Study design:	
RCT	n=3
NRCT	n=1
Mixed Methods study	n=1
Randomised pilot study	n=3
Non-Randomised pilot study	n=1
Intervention type:	
In person	n=2
Digital	n=6
Hybrid (Digital/In person)	n=1
Stage of cancer:	
I	n=5
II	n=0
III	n=0
IV	n=0
Any stage	n=4
Ethnicity of participants:	

African Americans	n=7	
Asian Americans	n=1	
Hispanic/Latino	n=1	

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2 <u>Description of interventions designed to optimise experience with SACT for people from MEG</u>

3 Key characteristics of the studies were summarised in table 2. There was much heterogeneity within
4 the study populations and outcomes for the nine included studies. Interestingly, all the studies were
5 conducted in the United States of America (USA) with a wide range of sample sizes, including studies
6 with 24 participants and larger studies recruiting 1442. Studies employed different designs to deliver
7 interventions and were carried out by various healthcare professionals, often race matched (n=5)
8 with the participants in the studies. The length of the studies ranged from a single two-hour
9 workshop intervention (n=1) to studies supporting patients through care navigation and highlighting
10 missed appointments to providers over a 5-year period (n=1). Seven different categories of outcome
11 variables were examined across the 9 studies: medication adherence (n=2), health literacy (n=1),
12 completion of treatment (n=1), self-efficacy (n=2), quality of life (n=2), survivorship experience (n=1),
13 feasibility of an intervention (n=2).

14 <u>Digital interventions versus in-person and hybrid interventions</u>

15 Of the nine studies, six interventions were conducted digitally, two were delivered in person and
16 another study incorporated mixed mode of delivery. (Appendix 3) The majority of interventions used
17 technology to optimise patients' experiences with SACT. There were only two studies that assessed
18 quality of life of participants and both of them showed no effect post intervention [24,25]. The rest
19 of the four digital studies had positive outcomes, including improved completion rates of treatment
20 [26] and high satisfaction with the programme's content on the websites [27,28]. Randomised pilot
21 study conducted by Perez et. al reported moderate-to-high levels of positive emotional reactions to
22 stories and identification with storytellers.[29] Digital interventions used different approaches to
23 reach participants in their studies. Two of the studies designed culturally tailored virtual
24 programmes, available on their websites [27,28], three studies employed interactive videos showing
25 race-matched survivor stories [24,25, 29] and further digital study used electronic record system that
26 would flag up missed appointments or unmet milestones in patient's treatment. [30]

27 Out of two in-person delivered interventions, one did not show an effect on health literacy,
28 medication adherence or self-efficacy from pre-test to post intervention. [30]. Another in person
29 delivered study was a feasibility trial and reported increased self-efficacy in communicating with
30 providers and self-efficacy in making treatment decisions. [31]

31 An intervention conducted by Rosenzweig et.al. incorporated supportive video messages from the
32 African American community as well as in person training in their design. This hybrid study reported
33 a positive effect of a psychoeducational session with race-matched interventionist delivering training
34 sessions. [32]

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38 <u>Equity assessment of interventions designed to optimise experience with SACT for people from MEG</u>

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1 People from MEG were the focus population of the nine studies, where participants were mainly
2 recruited from urban locations (n=7), 17 community oncology practices (n=1) and online (n=1). All of
3 the studies incorporated culturally targeted materials in their design, ranging from guidebooks, print
4 materials and decision-making models. There were several similarities across the studies, such as
5 identification of the need to race match the recruiter with study participants [30,32], recognising the
6 importance of translating educational materials into native languages [24,28] as well as providing
7 staff with racial equity training [25,26,29].

8 Interventions were analysed using the equity framework as reported by Sayani et al. [5],
9 incorporating different accessibility dimensions such as approachability, acceptability, availability,
10 affordability, and appropriateness in people from MEG. (Table 4) All the interventions suggested that
11 approachability to SACT could be enhanced through raising awareness and recruiting participants
12 from different geographic locations, including both online and offline strategies.

13 Acceptability of interventions was reported in all but one study [30], which did not incorporate
14 neither cultural staff training, translation of materials into other languages or tailoring intervention
15 to personal and cultural values of participants. Only four interventions considered the availability of
16 SACT across people from MEG, as they did not rely on participants ability to use technology, and
17 recruitment was not dependent on prior engagement with the health care system.[24-27,] Three of
18 the nine interventions took into account affordability of SACT, by reimbursing patients for taking part
19 in intervention, the rest six interventions did not mention direct or indirect costs associated with
20 participation in a study. [25,30,31]. Finally, all but four interventions attempted to incorporate the
21 appropriateness of SACT services by increasing levels of engagement and promoting informed
22 decision-making. [26,28,30-32] No intervention in this scoping review incorporated all five
23 dimensions of the equity framework. Language barriers were addressed in studies by Im et.al and Loi
24 et.al., as participants' native languages were Asian and Spanish, respectively.

25 Table 3. Overview of included studies detailing interventions to improve experiences and clinical outcomes in
26 people from MEG receiving SACT treatments
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Author, year, country	Intervention delivery mode	Objectives	Methods	Sample Demographics	Outcomes	Quality assessment
Rust, 2015, USA [30]	In person Medication adherence skills training (MST) workshop	To explore what was the level and role of health literacy, with respect to medication adherence and self-efficacy.	Randomised pilot study	African American breast cancer survivors within one year of treatment from three urban areas of a Southeastern, Tennessee State (n=48)	Questionnaires were administered to measure patient self-efficacy in medication usage, medication adherence, and a three question measure for health literacy. Intervention did not show a statistically significant effect on health literacy (HL), medication adherence or self-efficacy. Statistically significant relationship was found between the initial HL and medication adherence.	3
Rosenzweig, 2011, USA [32]	Hybrid (in person and digital) Psychoeducational one to one intervention	To test the effect of an intervention on treatment adherence.	Randomised pilot study	African American breast cancer women receiving first adjuvant therapy from two urban sites of the Comprehensive Breast Program in the University of Pittsburgh Cancer Institute, a National Cancer Institute (n=24)	45-minute face-to-face meeting with intervention participants was recorded and adherence rates to chemotherapy were measured at three time points corresponding to treatment completion: 50%, 75%, and 100%. Results demonstrated more rapid initiation of chemotherapy and better overall adherence to chemotherapy.	2
Cykert, 2019, USA [26]	Digital Real time registry combined with feedback	To improve the treatment completion rates of surgery, recommended radiation and chemotherapy for each patient.	Non-randomised controlled trial (NRCT)	African American and White ethnic group patients with early stage lung and breast cancers at two cancer centres (n=302)	African American patients in the intervention group achieved a Treatment Complete rate of 88.4% compared to 89.5% for White ethnic group (p = 0.77).	1
Loi, 2016, USA[24]	Digital Self-administered stress management training	To examine the efficacy of a culturally and linguistically tailored training in improving QOL and reducing psychological distress.	Randomised controlled trial (RCT)	Hispanic/Latino patients newly diagnosed with cancer from 17 local community oncology practices across the U.S. and Puerto Rico (n=219)	No significant treatment effects on quality of life and reducing psychological distress were demonstrated. Improved mental health scores were observed with patients on a psychotropic agent (p=.04).	2

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Turbes, 2015, USA[27]	Digital Web-Based Programme using interviews, online screener and post-use survey	To assess implementation and fidelity of an intervention.	Mixed-method study	African American women age <45 with breast cancer from three cancer centres (n=1442)	75% of post-use survey respondents were very or somewhat satisfied with the web-based programme; 70% of respondents said the web-based programme content was somewhat or very useful.	1
Sheppard, 2013, USA [31]	In person Peer-Led decision support intervention	To assess the acceptability of the intervention.	Non-randomised pilot study	African American women over 21 years old diagnosed with any stage breast cancer from Washington, DC metropolitan area (n=76)	Participants reported increased self-efficacy in communicating with providers (70 %) and self-efficacy in making treatment decisions (70 %).	2
Perez, 2020, USA[29]	Digital Interactive cancer-communication video program	To examine the feasibility and acceptability of an interactive video program.	Randomised pilot study	African American women newly diagnosed with breast cancer from three cancer centres (n=107)	104 of 108 patients allocated to the intervention reported moderate-to-high levels of positive emotional reactions to stories and identification with storytellers.	1
Thompson, 2021, USA [25]	Digital Viewing survivor stories	To determine whether viewing survivor stories improved newly diagnosed African American breast cancer patients' QOL.	Randomised controlled trial (RCT)	African American women with breast cancer from three cancer centres (n=228)	No effect of study arm on QOL, depressive symptoms, or concerns about recurrence was found in this study.	1
Im, 2023, USA [28]	Digital Virtual program using social media sites, interactive online educational sessions and online recourses	To determine the efficacy of a culturally tailored virtual information and coaching/support program in improving patients survivorship experience.	Randomised controlled trial (RCT)	Asian American women within 5 years of the diagnosis from online and offline cancer support groups (n=199)	Women were asked to fill out the questionnaires at different points during 12week study period. Results showed that intervention group had a significant increase in their quality of life.	2

1   *Key to quality assessments: 1-Good, 2-Average, 3-Poor

2   Quality assessment/Critical appraisal of individual sources of evidence

3   Only one study [30] did not meet MMAT criteria and therefore was scored as a 3. Another four
4   studies have met the criteria at 60-80%, thus were given a score of 2. The remaining four studies
5   have met the MMAT criteria at 80-100% and were rated as good quality studies with a score of 1.

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2   Table 4. Accessibility dimensions identified in interventions targeting people in MEG receiving SACT [5]

Author, year, country	Positive impacts (Intended and/or Unintended)	Negative impacts (Intended and/or Unintended)	Dimensions of accessibility
Rust, 2015, USA [30]	Approachability: Participants were recruited by the staff of a community-based organisation for underserved and minority women diagnosed with breast cancer, helping participants to engage and connect with the study personnel. Affordability: All participants were compensated for participation with gift cards at the beginning and end of the study, however costs of transportation or treatment were not discussed in the study. Appropriateness: Patients were able to engage with a licensed pharmacist and social worker during two-hour workshop exploring medication usage and adherence.	Acceptability: Translational services were not mentioned in the study. Only the possibility of an oral questionnaire delivery was suggested. Availability: Even though participants for this intervention were recruited from three urban locations, increasing it's availability to reach several communities, the sample size was small, included only 48 patients with a very specific set of characteristics, therefore reducing the chances of taking part in the intervention for those individuals who were beyond first year of breast cancer treatment path. Participants were recruited through contacts with American Cancer Society or through community-based organisation, limiting its reach to patients from other organisations.	Approachability ※ Acceptability ※ Availability ※ Affordability ※ Appropriateness ※
Rosenzweig, 2011, USA [32]	Approachability: Race-matched recruiters were used during recruitment phase of the study. Acceptability: The interventionist was an African American breast cancer survivor. Appropriateness: Patients were provided with 1:1 supportive session discussing attitudes (including perceptions and stressors) that may affect adherence to clinical visits and treatment.	Availability: Patients were recruited from two University of Pittsburgh Cancer Institute clinics, thus limiting the participation in this intervention for wider communities. Affordability: Consideration of cost was mentioned only as limitation in this study. Cost to retain an interventionist on staff needs to be assessed to determine whether the intervention can be integrated into routine clinical practice.	Approachability ※ Acceptability ※ Availability ※ Affordability ※ Appropriateness ※
Cykert, 2019, USA [26]	Approachability: multi-faceted approach utilizing transparency of clinical data and care team accountability achieved through race-specific audit and feedback was required for the highest probability of success. Acceptability: Nurse and physician were specially trained in teach - back technique, anti-racism, and to advocate for patients. Availability: Study spanned over 5 years and nurse navigators have applied their special anti-racial training to all patients. Appropriateness: all patients were engaged in the study by trained personnel	Affordability: Cost implications of treatment or transportation were not mentioned, apart from a grant from The National Cancer Institute that was used to fund the study.	Approachability ※ Acceptability ※ Availability ※ Affordability ※ Appropriateness ※
Loi, 2016, USA [24]	Approachability: patients received targeted intervention Acceptability: Community experts and a certified translator were consulted for the initial adaptation and translation of English materials. Availability: patients were recruited from 17 community practices, thus expanding the pool of participants significantly.	Affordability: The costs of treatment or transportation were not accounted in the study. Appropriateness: 5-minute, standardized explanation of the nature and purpose of the intervention was provided. Patients were instructed to view the video/DVD first and to follow the directions in the booklet to better understand the training, practice and use of stress management techniques.	Approachability ※ Acceptability ※ Availability ※ Affordability ※ Appropriateness ※

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Turbes, 2015, USA [27]	Approachability: Participants received reproductive and psychosocial information and support using various platforms during the study. Acceptability: Materials of the intervention were culturally appropriate for the target population. Availability: intervention was provided via multiple channels, including web and social media.	Affordability: Ability to pay indirect costs such as transportation not covered Appropriateness: This intervention was highly reliant on technology, assuming that participants have access to internet and social media. Also this type of intervention does not engage patients to high extent in the decision making about their treatment.	Approachability � Acceptability ✓ Availability ✓ Affordability ✗ Appropriateness ✗
Sheppard, 2013, USA [31]	Approachability: Women with histologically confirmed breast cancer were recruited from the Washington, DC area Acceptability: The coach used a culturally appropriate guidebook and decision-making model—TALK Back! Appropriateness: Peer-delivered culturally relevant decision support intervention for Black women with breast cancer. Affordability: Ability to pay indirect costs such as transportation not covered. Participants received a grocery store gift card.	Availability: Patients were recruited mainly from cancer surgeons.	Approachability ✓ Acceptability ✗ Availability ✗ Affordability ✓ Appropriateness ✓
Perez, 2020, USA [29]	Approachability: Intervention arm completed a baseline/pre-intervention interview, received the video intervention, and completed a post-intervention 1-month follow-up interview. Acceptability: Intervention was conducted by specially trained study team coordinators.	Availability: Patients were recruited from their breast surgeons Affordability: Ability to pay indirect costs such as transportation not covered Appropriateness: Patients received a brief (~10 minute) in-person training to use the video program plus an instructional user guide to take home.	Approachability ✓ Acceptability ✓ Availability ✓ Affordability ✗ Appropriateness ✗
Thompson, 2021, USA [25]	Approachability: African American women with non-metastatic breast cancer interviewed five times over two years. Acceptability: The video used in the intervention was culturally adapted to the participants. Availability: Participants of the study were interviewed five times over a period of two years, intervention was reliant on ability to use tablet or computer Affordability: Ability to pay indirect costs such as transportation not covered. Participants received $25 per interview.	Appropriateness: Patients were instructed to watch videos and understand and interpret their content in their own homes.	Approachability ✓ Acceptability ✓ Availability ✓ Affordability ✓ Appropriateness ✗
Im, 2023, USA [28]	Approachability: Support programme was created for Asian-American women with breast cancer Acceptability: The content of interventional material was culturally tailored to Asian-American women (intervention components that were provided in five languages (English, Mandarin Chinese [Simplified and Traditional], Korean, and Japanese) Appropriateness: The social media sites provided a medium by which participants could connect to each other and share their own breast cancer survivor experience with peers.	Availability: The intervention group utilized American Cancer Society [ACS] website to deliver intervention Affordability: Ability to pay indirect costs such as transportation not covered	Approachability ✓ Acceptability ✓ Availability ✗ Affordability ✗ Appropriateness ✓

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Discussion

This was the first scoping review of its kind investigating interventions to optimise SACT treatments in people with cancer from MEG. The review showed the breadth of interventions that have been researched that could have the potential to improve patient experience, self-efficacy when making decisions related to SACT and adherence. Our searches found only a small number of studies in total, with differing outcome measures. Studies developed were focussed on digital interventions that were either offering holistic support to patients or educational materials. Comparing digital versus in-person delivered interventions showed that there was no difference in one mode of delivery superseding another, where equity related provisions were considered. Interventions that were most effective in improving access to SACT used variety of approaches, ensuring the design of the study integrated wide range of accessibility parameters, such as approachability, acceptability, availability, affordability, and appropriateness of the studies. We adapted an existing equity framework [6] to assess patients' from MEG experiences during their SACT treatments. Our results suggested that structural and social determinants of health were interconnected and highlighted the importance of incorporating these equity considerations when developing interventions. It was surprising that none of the studies were conducted outside of the USA. The UK population is 18% from MEG and therefore inclusive cancer care would benefit 1 in 5 patients. [33] Another unexpected finding was that none of the studies had assessed the economic impact of interventions, which is essential for health care researchers, policy makers and providers to make informed decisions.

The majority of studies were describing interventions in early breast cancer – a finding that is not surprising as breast cancer is among the top three cancers globally, affecting 2.26 million women and is the leading cause of cancer mortality worldwide [34]. There are multiple factors behind disparities that are affecting global cancer survival rates and it is one of the World Health Organisations' (WHO) priorities to improve survival across the world. Breast cancer patients are being offered a comprehensive treatment and supportive care, but still adherence issues are very common and understood to have health economic implications [35]. Non-adherence to prescribed medications is associated with poor therapeutic outcomes, progression of disease and overall healthcare costs. Improvement in adherence can help in reducing the economic burden in long-term and improve cost-effectiveness [36]. Significant economic barriers to cancer services still exist and people from MEG are impacted by structural vulnerability, combining factors such as poverty, homelessness and racism. Research indicates the populations that experience socioeconomic disadvantage more likely to experience delays in starting SACT treatment, are less likely to receive any treatment and have poor adherence rates to systemic therapy. Interestingly, results of this scoping review show that digital interventions were chosen as a preferred method of conveying information to people from MEG, suggesting that there is access to technology and capacity to be able to self-manage their care needs and navigate a complex care system. [37]

Following the Covid-19 pandemic there have been an increased number of virtually delivered healthcare interactions [38,39] and they are still being used daily in current practice worldwide, albeit mostly in high-income countries. Digital interventions reduce costs associated with appointment scheduling and can reduce travel time for patients to cancer centres, thus translating into increased patient satisfaction with their care. Virtual coaching and digital support programmes could potentially change health behaviours and as a result improve health outcomes amongst vulnerable cancer patients. However, using telehealth as a means of providing healthcare services to people with cancer from MEG could be also seen as another potential avenue for widening inequity among cancer patients, as low and middle-income countries should be able to benefit from it too [40].

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One previous systematic review by Hayanga et. al [41] suggested that for some people from MEG with multiple long-term conditions in the United Kingdom there may be inadequate initiatives for managing health conditions and that there is a need for enhanced strategies to reduce ethnic inequalities in healthcare. Wider societal processes such as suboptimal healthcare provision together with individual cancer patients' from MEG journey (with additional barriers, such as language difficulties and poor literacy skills) can have negative impact on people's ability to access and utilise healthcare services effectively.

Another study by Unruh et.al, comparing health policy responses to COVID-19 highlighted that there needs to be a universal investment across the health sector physical infrastructure and training to reduce unmet care needs and health inequalities among the most vulnerable population groups. [42]. Interventions to reduce health inequity should be directed at downstream determinants of health, such as individual health-care needs, midstream determinants, such as neighbourhood conditions, or upstream determinants, such as structural racism and discrimination. There are several theoretical approaches to social determinants of health with ethnicity and racism falling under a social disadvantage approach. Greater social disadvantage is associated with poorer health and more research is needed to clarify the underlying pathways.

This study has identified gaps in the design of interventions targeted at people from MEG populations and a new equity-framework was tested for patients undergoing SACT. Future interventions exploring the relationship among minority patient groups may use this framework as a useful tool in their equity assessments to improve access to SACT across all at-risk groups and reduce inequalities in cancer care.

Study Limitations

This is the only study of its kind that we are aware of, utilising a systematic methodology including quality appraisal by two researchers, incorporation of an equity-based framework and intervention reporting guidelines. Despite this, there were very few studies that met our inclusion criteria, and we were limited by small sample sizes. By nature, scoping reviews capture the breadth of literature in the area and therefore our studies were heterogeneous in the methods used. This scoping review maps out the currently available literature on interventions in people with cancer from MEG and highlights the need for further adequately powered interventional studies. Future work should focus on further evaluation of SACT services provided in cancer centres, starting with a local context assessment and review of policies.

Conclusions

The key findings were that published evaluations of interventions to optimise SACT management in people from MEG are limited to early breast cancer patients, predominantly of African-American background, and that studies were mainly conducted in high-income countries, such as USA in particular. We found evidence of interventions incorporating the equity domains that reported improved patient engagement and experience. This new knowledge will help to implement future SACT interventions, addressing health inequities across the cancer continuum and explore future directions in patient navigation to promote equitable care. Healthcare providers should view the equity considerations identified in this review as unique perceptions of people from MEG undergoing SACT treatment rather than obstacles in providing cancer care. The future research should focus on psychosocial and cultural influences to help design effective equitable interventions.

Key messages

1. Evaluations of interventions to optimise SACT management in people from MEG are limited to African American early breast cancer patients.
2. All studies were conducted in high-income countries, such as USA.
3. Interventions that incorporated equity domains into their design had positive impact on patient experience with SACT.
4. The future research should focus on psychosocial and cultural influences to help design effective equitable interventions.

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Figure 1. Equity-orientated SACT intervention considerations for patients from MEG.

Figure 2. Prisma flow diagram